

# **Conservation Plan: Illinois Chorus Frog (*Pseudacris streckeri illinoensis*)**

**Proposed Mason County Wind Farm  
Mason County, Illinois**

July 11, 2012  
Terracon Project No. 15117907

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**CONSERVATION PLAN: ILLINOIS CHORUS FROG**  
**Proposed Mason County Wind Farm**  
**Mason County, Illinois**  
**Project No. 15117907**

## **1.0 INTRODUCTION**

Terracon Consultants, Inc. (Terracon) was retained by REMASON Wind LLC. (REMASON) to develop the following Conservation Plan as application for the authorization for incidental taking of an endangered or threatened Species, as determined by Illinois Administrative Code Title 17, Part 1080. It is the opinion of the Illinois Department of Natural Resources (IDNR), Terracon, and REMASON that incidental take of the Illinois chorus frog (*Pseudacris streckeri*) is possible as a result of the development of a wind farm at the project site in Mason County, Illinois proposed by REMASON.

According to Section 3 of the Illinois Endangered Species Act (520 ILCS 10/3), it is unlawful for any person to possess, take, transport, sell, offer for sale, give or otherwise dispose of any animal or the product thereof of any animal which occurs on the Illinois List. The term "take", in reference to animals and animal products, is defined by the Illinois Endangered Species Protection Act as "...any action that serves to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct..." Section 5.5 of the Illinois Endangered Species Act (520 ILCS 10/5.5) states that the IDNR may "...authorize, under prescribed terms and conditions, any taking otherwise prohibited by Section 3 if that taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity..." However, incidental taking of an endangered species cannot be authorized without the submittal of a conservation plan, as detailed by the IDNR.

### **1A. Project Area**

The proposed wind farm project is located in all or portions of Sections 7-12, 15-21, 29-31; Township 21 North, Range 5 West, Sections 12-14, 21-29, 33-36; Township 21 North; Range 6 West, Mason County, Illinois, as depicted on Exhibit 1 in Appendix A. More specifically, the project is located south of Highway 136, north of Highway 29, and on either side of Wagonseller Road, approximately two miles north of Mason City, Illinois and approximately three miles southwest of San Jose, Illinois. An aerial photograph of the project area is included as Exhibit 2 in Appendix A.

Terracon understands that the full-built plan is to develop the wind farm project on approximately 15,000 acres of private land and that 67 turbines are currently proposed to be installed. Additionally, Terracon understands that access roads, laydown areas and transmission lines will be installed as part of the project.

The proposed Mason County Wind Farm is located in central Illinois with the Illinois River located approximately 15 miles to the west of the site. The project area is located in the USEPA Level IV Ecoregions 54a and 54d, described as the Illinois/Indiana Prairies (54a) and Sand Area (54d) of the Central Corn Belt Prairies. See Exhibit 3 in Appendix A.

The western portion of the project footprint is located in Ecoregion 54a, which is characterized by dark, very fertile soils that developed under tall-grass prairie; in addition, marshes and wet prairies naturally occurred in poorly drained areas, and forests grew on concentric moraines and floodplains. Poorly drained land, pools, and swamps were common at one time in this region; however, extensive areas have been tiled and ditched to make the land more suitable to agriculture and settlement. Nearly all of the original prairies in this region now exist as agricultural land, primarily for the growth of corn and soybeans. (Woods et al. 2006).

The eastern portion of the project footprint is located in Ecoregion 54d, which is characterized by extensive sand plains and relict dunes. Today, the region exists primarily as cropland and pasture. Crops on sandy outwash plains generally require irrigation, while drainage ditches are common in poorly drained areas. Plentiful, easily accessible ground water occurs in the region and is an important local source for irrigation and stream flow.

The project site currently exists almost entirely as agricultural land and residential properties. Natural vegetation is limited to small wooded corridors associated with onsite drainages and small grassland areas generally utilized as livestock pasture. The National Wetlands Inventory (NWI) indicates numerous wetland areas and several ponds located throughout the project area (see Exhibit 2).

The Natural Resources Conservation Service (NRCS) soil data indicates numerous types of sandy soils existing within the project footprint, including sand, sandy loams, and loamy sands (see Exhibit 4). Sandy soils are an important aspect to the life history of the ICF for purposes of burrowing and underground foraging. The NRCS soil data provides important information on the possible areas located within the project boundaries where ICF individuals may choose to burrow for either foraging purposes or hibernation/aestivation.

## **1B. Biological Data for the Illinois chorus frog**

The Illinois chorus frog (ICF) is a small frog, approximately 1.5 to 1.75 inches in length, tan to gray in color with dark brown to black lines on its back. This species inhabits ecosystems including sand prairies and remnants, including agricultural fields and waste areas. The ICF is believed to be restricted to sand prairies of northeast Arkansas, southeast Missouri, and southeast and central Illinois (Conant and Collins, 1998). In Illinois, this species has been found in Mason, Alexander, Tazewell, Madison, Cass, Monroe, Scott, and Morgan Counties (Illinois Endangered Species Protection Board). Viable ICF habitat has been further restricted through the conversion to agriculture and other human activities. The ICF is currently listed as a

threatened species in Illinois (Nyöber, 2004; IESPB, 2011). The listed status of this species is primarily due to the small amount of sandy habitat present in Illinois and extensive use of agricultural practices introduced to the area. Extensive tiling of the landscape for proper drainage of agricultural fields and the constant turnover of agricultural fields has aided in the degradation of both the natural breeding and foraging habitat of the ICF.

The ICF leads a primarily fossorial lifestyle, spending approximately 10 to 12 months of the year underground. This species requires sandy substrates for underground behaviors including aestivation, hibernation and foraging (Brown and Rose, 1998). The ICF is capable of subterranean feeding, utilizing its strong forearms to burrow through sandy soils and capture subterranean prey including small insects and burrowing insect larvae.

The ICF breeding period occurs between the months of February and April (Brown and Rose, 1988). The ICF typically emerges after heavy spring rains to breed in nearby flooded fields, ditches, and other vernal pools. The first sign of breeding activity is the sound of many frogs calling from wet areas. ICF individuals can be heard singing during the breeding period, with calls able to be heard at distances up to one mile. The males often call while mostly submerged in the water and are very difficult to see while calling (Illinois Endangered Species Protection Board). The ICF prefers pools that persist from February through June, a time period that allows for breeding and the transformation of offspring. Year-round waterbodies are often home to species known to predate on ICF and its offspring, including fish and salamanders. Successful breeding pools typically include some type of vegetative bank cover and/or emergent vegetation that allows egg attachment and protection from predators (Tucker, 2008).

A female lays approximately 400 eggs in small, gelatinous clusters attached to twigs and branches underwater. Embryos hatch within a few days and tadpoles transform in approximately two months. Tadpoles eat suspended matter, organic debris, algae and plant tissue (Missouri Department of Conservation). Upon completion of the breeding season and/or transformation of offspring into adult frogs, ICF individuals will disperse to burrowing habitats. Studies have indicated that ICF individuals are able to disperse at least one mile from their natal pools (Tucker et al., 2000). Mark and recapture studies performed on ICF populations in Illinois have documented recaptures of ICF individuals up to six years after their initial capture, indicating that the life expectancy of the ICF is at minimum six years.

Data collected from IDNR survey efforts during March 2009 indicate approximately 23 breeding pools were observed within the project boundaries. Additionally, a pre-construction survey performed by Terracon biologists in March 2012 located one active breeding pool within the project boundaries. ICF breeding habits are driven primarily by early spring temperature and rainfall. The early spring of 2012 was uncommonly warm, with little precipitation. Such conditions have been cited to be unfavorable to the reproduction of the ICF and may cause individuals to remain underground until the following breeding season (Tucker, 2008). ICF

breeding locations appear to be concentrated along the central portion of the proposed project area, with few locations identified within the western or eastern portions of the site.

Previously recorded ICF breeding locations were observed for current conditions during the 2012 survey conducted by Terracon biologists. These previously documented breeding pools were most often found to exist as roadside drainage channels, ponds, and slight depressions and drainage channels located within agricultural fields. A majority of the previously documented breeding locations were observed to contain no water during the 2012 survey. Observed locations were found to exhibit inconsistent vegetative cover, with heavy emergent vegetation at some locations and little to no vegetation in others. Within the proposed project boundaries, documented breeding pool locations were generally observed to be within close proximity to areas indicated as emergent wetlands and/or freshwater ponds by the National Wetland Inventory (NWI); however, most areas indicated by the NWI were observed to be dry and appeared to exist as cultivated land exhibiting no wetland vegetation.

#### **1C. Proposed Project Activities with Potential for Impact to the ICF**

Due to the fossorial nature of the ICF, adverse effects to the species are possible during the initial development phase of the proposed wind farm, primarily as a result of construction activities and more specifically, excavation activities. Excavation activities will occur in areas inclusive of turbine locations, collector cables, transmission routes, and access roads.

In addition, impacts to ICF individuals may include operational activities of the proposed wind farm. It is possible that vibrations from erected turbines and electric impulses from collector cables may interrupt the natural behaviors of ICF individuals. However, the effects of vibrations and electrical conduction on the ICF have not yet been studied and it is unknown as to what, if any, impact these entities would have on the behavior and/or survivorship of the ICF.

The conversion of the natural landscape for agricultural use is believed to be the primary threat to the survivorship of the ICF. The project site currently exists almost entirely as agricultural land and residential properties. Agricultural activities including installation of tile and irrigation systems, tilling of soils, and utilization of pesticides and other chemical agents have previously degraded much of the natural ICF habitat that may be present within the project area. The current project layout (see Exhibits 4 and 5) has indicated turbines will be placed within agricultural fields and will not impact areas that currently exist in their native form.

#### **1D. Potential Adverse Effects of Project Activities on the ICF**

Activities related to excavation have the potential to disturb the burrowing and foraging habitat of the ICF. Additionally, the use of heavy equipment during construction and excavation activities may result in the incidental take of ICFs. Unfortunately, the fossorial and secretive

nature of the ICF, combined with the small size of the frog creates difficulty in the avoidance of ICF individuals while conducting constructions activities.

In certain areas, turbine foundations and access roads will remove potential ICF habitat permanently; however, after completion of construction, vehicle use of access roads is expected to be light as the access roads will primarily be used for accessing turbines to conduct regular turbine maintenance. The project area currently exhibits heavy fragmentation by asphalt and gravel roads that occur approximately every half to one mile across the footprint, including a heavily traveled state highway. Two laydown/storage areas will be utilized to hold items related to the construction of the wind farm. Upon completion of construction activities, the laydown/storage areas will be converted back to agricultural areas; therefore, impacts to potential ICF habitat in these areas will be temporary. Trenches dug for the collection system will be filled upon installation of collector cables, making this impact temporary. However, it is unknown what impact, if any, collector cables may have on the underground movement of ICF individuals.

ICF surveys conducted within the project boundaries indicate that the species is present and continues to utilize the area despite continuous impacts to its natural habitat through agricultural and residential activities. Development of the proposed wind farm is not anticipated to impact areas outside of those currently affected by agricultural and residential activities.

## **2.0 MINIMIZATION AND MITIGATION**

### **2A. Affected Area**

#### Minimization of Affected Area

Minimizing the amount of land that will be affected by the activities described in Section 1C is anticipated to reduce the risk of impact on the ICF and its habitat and decrease the potential for incidental take during such activities. The efforts described in this section will be applied during the planning and development phases of the proposed wind farm to minimize the affected area:

A preliminary turbine layout plan has been included as Exhibits 4 and 5 in Appendix A of this report. In addition to respecting certain requirements to wind turbine siting including, but not limited to, setbacks from existing structures, landowner claim, wind direction, and interference, locations of previously documented breeding pools were utilized when siting turbine locations for the preliminary layout. A buffer of 500 feet from previously documented breeding pools was maintained for each of the turbine locations. In addition, REMASON will maintain the 500-foot buffer in regards to the placement of cranes utilized in the installation and maintenance of the turbines. The minimization efforts incorporated into the preliminary turbine layout plan is included as Exhibits 4, 5 and 6 in Appendix A of this report.

As a result of implementing the additional buffer to documented breeding locations, REMASON has decreased the number of turbines to be installed by approximately 20% (from 83 turbines to 67 turbines). In turn, the decrease in number of installed turbines effectively reduces the amount of ground impacted from access roads, collection systems and turbine footprints. Overall, the approximate 20% reduction in number of turbines decreases the overall affected area and decreases the risk of potential for impact to ICF habitat and/or incidental take of the ICF.

Construction activities and turbine placement will not occur at areas indicated as emergent wetlands and/or freshwater ponds by the NWI. These areas are more likely to have the potential to hold water and provide breeding habitat for the ICF. Therefore, withholding turbine placement from these locations will potentially decrease impacts to ICF breeding habitat.

The most direct route will be utilized when laying out access roads and collection systems. This will decrease the overall amount of ground disturbed by construction activities as well as decrease the amount of impact to potential ICF habitat. Care will be taken to prevent discharge of chemicals that could permeate the soil and negatively affect burrowing ICF and/or groundwater sources. Additionally, fill materials used in the development of the wind farm will be required to be clean and not contain materials that may negatively affect burrowing ICF and/or groundwater sources.

To increase awareness and to potentially decrease the risk of incidental take of ICF individuals, construction personnel will be educated on the appearance and possible presence of the ICF. Employees will be trained to report any potential ICF sightings during the course of construction activities of the proposed wind farm.

#### Total Area Affected

As described above, potential impacts to the ICF will occur primarily as a result of construction activities related to wind farm development. While surveys have been conducted to document onsite breeding locations, onsite subterranean burrowing habitat is currently unknown. The ICF requires sandy soils for burrowing activities, therefore assumptions can be made that areas containing sandy soil represent potential ICF burrowing habitat. Exhibit 4 in Appendix A of this report illustrates areas within the project boundaries defined as sandy, sandy loam and loamy sand soils by the NRCS.

Without sufficient data concerning actual habitat for the ICF within the project boundaries, it is difficult to estimate the amount of ICF habitat that will be impacted as a result of wind farm activities. However, based on the current layout plan, an estimate of the amount of overall area affected by construction activities related to development of the wind farm is defined in this section and further illustrated in Table 1 below. A preliminary development plan for access roads, collector cables, and transmission lines has been developed by REMASON engineers; therefore lengths/acreages for these items were estimated based on the current preliminary

development and turbine layout plan. Each of the proposed 67 turbines will have a footprint measuring approximately one acre, resulting in approximately 33.5 acres of temporary and 33.5 acre of permanent impact to potential habitat. Approximately 95,000 linear feet (18 miles) of 30-foot wide access roads will be constructed during the development of the wind farm, resulting in approximately 66 acres of access road. Approximately 22 miles of collector cable and 2 miles of transmission lines will be utilized for the wind farm project. In addition, approximately 16 miles of transmission line that will connect to the first available substation (approx. 16 miles north of the project) will be installed for the project and will be aligned offsite. Two laydown areas will include approximately 68 acres of impacted area, however this area will be temporary, excavation will not be included within the laydown/storage areas, and the areas will be returned to agricultural areas once construction is completed.

<b>TABLE 1. ESTIMATED AMOUNT OF AREA AFFECTED BY CONSTRUCTION ACTIVITIES</b>		
<b>Impact Description</b>	<b>Impact Type</b>	<b>Estimated Impact Amount</b>
Turbine Footprint (Approximately 1 acre/turbine)	Temporary	33.5 acres
	Permanent	33.5 acres
Access Roads (Approximately 30 feet in width)	Permanent	18 miles / 66 acres
Laydown/Storage Areas (Approximately 34 acres/area)	Temporary	68 acres
Collector Cables (Trenches approximately 10 feet in width)	Temporary	22 miles / 26 acres
Transmission Lines (Trenches approximately 10 feet in width)	Temporary	2 miles / 2 acres
	Temporary (offsite)	16 miles / 19 acres
<b>Estimated Total Affected Area</b>		<b>248 Acres</b>

#### Estimated Potential for Incidental Take

The exact number of ICF individuals currently existing within the boundaries of the proposed wind farm is currently unknown. Numbers of individuals utilizing breeding pools within the project footprint have been estimated during surveys conducted by both IDNR and Terracon. Surveys completed in March 2009 by IDNR biologists indicated approximately 500 individuals calling from 36 breeding pool locations within and adjacent to the project boundaries. A survey completed by Terracon in March 2012 estimated approximately 10 to 15 individuals calling from one breeding pool location located within the project boundaries.

These numbers are estimates based on the level of calling noted during survey efforts and do not reflect an effort to capture and count all calling frogs. In addition, this data does not provide an estimation regarding the number of female frogs (because they do not call during breeding season), nor does it provide information regarding number of offspring reared and brought to maturity. Finally, no data is available as to how many individuals remain onsite during the non-breeding season, or where underground burrowing habitat exists within the project boundaries. Therefore, it is difficult to have a comprehensive understanding of the number of ICF individuals that exist within the areas where construction activities are proposed. These unknowns also

make it difficult to estimate the number of ICF individuals that may be incidentally taken through activities related to the proposed wind farm.

However, a quantitative assessment of incidental take for this species was developed utilizing breeding data from Terracon and IDNR surveys and the proposed amount of impact to potential ICF habitat. See Table 2.

<b>TABLE 2. ESTIMATION OF INCIDENTAL TAKE OF THE ILLINOIS CHORUS FROG AS A RESULT OF ACTIVITIES PERTAINING TO THE PROPOSED MASON COUNTY WIND FARM</b>	
A. Estimated number of ICF individuals observed calling within and adjacent to project boundaries	500
B. Number of documented breeding locations within/adjacent to project site	37
C. Approximate number of ICF individuals per breeding location (A/B)	14
D. Number of documented breeding locations within project boundaries	24
E. Approximate number of breeding ICF individuals within project boundaries (C*D)	336
F. Approximate area of proposed wind farm	15,000
G. Estimated number of ICF individuals per acre (E/F)	0.022
H. Estimate acreage of area affected by wind farm development activities	248
I. Estimated number of ICF individuals that may be taken as a result of wind farm activities (G*H)	5.46

## **2B. Area Management**

REMASON recognizes the importance for managing areas affected by wind farm activities to ensure the continued use of the area by the ICF and other Illinois faunal species. Development of the wind farm will be conducted in a timely manner as to not prolong disturbance within the area. As specified above, impacts to certain areas will be temporary and will be returned to the original conditions upon completion of construction activities for the wind project.

## **2C. Mitigation**

It is anticipated that minimization efforts, as described in section 2A, will significantly decrease the potential for incidental take of the ICF. However, due to the secretive nature of the species and the amount of potential habitat existing within the site that may be utilized by the ICF, complete avoidance of impacts is difficult. The following actions will be taken as mitigation for the proposed impacts to potential ICF habitat.

### Construction of Potential Breeding Habitat

Breeding pools will be constructed to provide additional breeding habitat within the project footprint. Constructed breeding habitats will be located adjacent to constructed access roads and locations will be selected with regards to landowner and leasing constraints and suitable soil for the construction of a viable breeding pool. Breeding pools will be constructed as linear depressions and designed in a manner that will encourage the retention of water following

precipitation events (and/or through the influence of a seasonal high water table, if present) to allow for breeding and transformation of offspring.

## **2D. Monitoring**

Site management regarding the ICF will continue past the initial construction phase of the proposed Mason County Wind Farm project. Post-construction monitoring of the site will serve to assess the effects of the minimization and mitigation efforts set forth in this conservation plan.

### Post-Construction ICF Presence Survey

Post-construction surveys will be conducted on an annual basis for a minimum of three years to provide data pertaining to the continued use of the project area by the ICF. Roadside chorus surveys will allow researchers to locate and document active breeding pools and assess overall presence and activity of the ICF within the project boundaries. A three-year period will be utilized to gather sufficient data to document that an ICF population is still present within the active wind farm.

### Constructed Habitat

Surveys will be conducted during the ICF breeding season to assess use of constructed breeding pools by ICF individuals. Surveys will be conducted concurrently with the proposed annual post-construction presence and activity surveys. Constructed breeding pools will be monitored for their success as an active onsite breeding location for ICF.

## **2E. Adaptive Management Practices**

Final placement of wind turbines, collection systems, and access roads require the evaluation of a number of variables including, but not limited to, setbacks from roadways and existing structures, wind direction, interference, and other environmental factors. Each variable included in the placement of items pertaining to the development of the proposed wind farm works to decrease the actual area of usable land. The final layout plan may be altered to address landowner requests and/or to maximize the efficiency of the proposed wind farm. Therefore, the final layout may result in reduced and/or increased impacts to potential ICF habitat located within the project boundaries. If layout changes are proposed after the submittal of this conservation plan, efforts will be made to follow minimization efforts, as described in section 2A of this report. Additionally, any alterations in turbine placement will continue to maintain a buffer of 500-feet from previously documented breeding locations.

Because ICF breeding behavior has been shown to rely heavily on temperature and amount of precipitation in any given year, it is important that sufficient data is gathered during productive ICF years. Surveys will be conducted yearly; however, if more than one year of the projected three-year survey period is dry and does not provide ample data regarding the continued use of

the ICF within the project boundaries, additional surveys will be conducted but not to exceed in any case a maximum of five years.

## **2F. Financial Assurance**

REMASON is committed to the success of this conservation plan and the protection and preservation of the ICF. REMASON will ensure funding to implement all activities discussed within this conservation plan, inclusive of post-construction monitoring. REMASON is a subsidiary of Relight, the leading Italian provider in renewable energy. Relight and its subsidiaries manage alternative energy projects in five countries, including a 4000 megawatt wind and 2000 megawatt solar portfolio in the United States.

## **3.0 ALTERNATIVE ACTIONS**

Alternative actions were considered during the conception phase of the proposed wind farm that would minimize or eliminate the risk for take of the ICF. These alternatives are described below.

### Original Development Plan

The original development plan for the wind farm project called for 83 turbines to be installed within project boundaries. The original development plan was created prior to acquiring data regarding onsite ICF presence. This alternative was ultimately not selected for the project due to the increased risk for impact to potential onsite ICF habitat.

### Amended Development Plan

An amended development plan was created for the wind farm project upon receiving ICF data requested from IDNR and the results of an onsite ICF survey performed by Terracon, on behalf of REMASON, in February of 2012. Along with required setbacks from existing structures, land acquisition capabilities, wind direction, and interference, REMASON incorporated a 500-foot buffer around each previously documented breeding pool. As a result, the number of proposed turbines to be installed was cut by approximately 20%, from 83 to 67. This alternative represents the current and preferred development plan for the proposed wind farm project.

### No-Action Alternative

An alternative action that would eliminate the risk of incidental take as a result of wind farm development activities is a no-action (no-build) alternative. As discussed, the ICF is a secretive species with many uncertainties surrounding the exact locations of burrowing and breeding habitat within the project. While other considered alternatives are believed to decrease the risk of incidental take, a no-build alternative is the only alternative that would completely eliminate the potential for incidental take of the ICF. This alternative would require the proposed wind farm project to be abandoned.

This alternative was not selected because REMASON believes that renewable energy, in the form of wind power, is important to the sustainable growth of the local area, the nation, and the world. Additional areas for this wind project were sought out during the initial planning stages of this project; however, available land for wind energy projects is generally limited due to site availability and areas with viable wind resources. To date, REMASON has put much time and effort to evaluate the proposed project area and believes it would support an important component of renewable energy for the area and would be beneficial to the residents of Mason County, Illinois.

#### **4.0 SURVIVORSHIP OF THE ILLINOIS CHORUS FROG**

It is not expected that the proposed taking will reduce the likelihood of the survival of the ICF within the State of Illinois. While there is potential for the incidental taking of individuals of the species, only a small portion of the potential habitat for the species within Mason County and the state of Illinois will be impacted. Ultimately, a majority of the proposed impacts will be temporary and the amount of potential habitat will be minimal when compared to ICF habitat located throughout Mason County and Illinois. Nearly all the area that will be impacted during wind farm development has previously been disturbed through agricultural activities. Within the project boundaries, the natural biotic community of which the species is part has been continuously altered through installation of underground irrigation systems, yearly turn-over of crops, use of pesticides and soil additives, and the use of tiling systems to ensure proper drainage for crop production. Based on local data, the ICF appears to have continued to inhabit the area, despite the continued alterations to the natural landscape. Undisturbed sand prairies, the natural habitat of the ICF, were not observed within the project boundaries. Therefore, it is not believed that the proposed development of the wind farm will have a greater effect on the survivorship of the ICF than previous and current agricultural impacts.

## **5.0 IMPLEMENTING AGREEMENT**

On behalf of REMASON Wind, LLC (REMASON), Terracon Consultants Inc. (Terracon) has developed a series of measures to minimize and mitigate impacts to the Illinois Chorus Frog and areas of potential Illinois Chorus Frog habitat as a result of the proposed construction, development, and operation of the proposed Mason County Wind Farm. These measures, as detailed in the attached Conservation Plan, were furthermore developed to assist in preventing the unlawful taking of the Illinois Chorus Frog that is listed as threatened by the Illinois Department of Natural Resources (IDNR). REMASON shall perform and carry out measures set forth in the Conservation Plan including, but not limited to, minimization, mitigation, monitoring, funding, and adaptive management.

Further, upon finalization of a development plan for the proposed wind farm and prior to the start of development activities, REMASON will provide a copy of the final development plan to IDNR for review compliance with measures set forth in the Conservation Plan.

Monitoring activities will be conducted annually, as outlined in Section 2D. Annual reports summarizing the results of those monitoring activities will be completed and submitted to IDNR within 60 days of the completion of all monitoring activities. It will be the responsibility of IDNR to review annual reports and to acknowledge compliance with the Conservation Plan. In the event deficiencies are observed, IDNR will discuss corrective measures with REMASON and/or REMASON's authorized representative(s).

REMASON agrees to comply with all other federal, State and local regulations pertinent to the execution of the actions described in the Conservation Plan.

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## 6.0 REFERENCES

Brown, L.E. and G.B. Rose. 1988. Distribution, habitat, and calling season of the Illinois chorus frog (*Pseudacris streckeri illinoensis*) along the lower Illinois River. Ill. Nat. Hist. Surv. Biol. Notes 132:1-13

Conant, R. and J.T. Collins. 1998. A field guide to reptiles and amphibians of eastern and central North America, fourth edition. Houghton Mifflin Co., Boston, USA.

Illinois Endangered Species Protection Board and Illinois Department of Natural Resources. Illinois Chorus Frog. Retrieved from:  
<http://www.mvr.usace.army.mil/PublicAffairsOffice/DMMP/documents/ChorusFrogFactSheet.pdf>  
(March 2012).

Illinois Endangered Species Protection Board. 2011. Checklist of endangered and threatened animals and plants of Illinois.

Missouri Department of Conservation. Illinois Chorus Frog. Retrieved from:  
<http://mdc.mo.gov/discover-nature/field-guide/illinois-chorus-frog> (April 2012)

Nyöber, Randy W., J.R. Herkert, and J.E. Ebinger. 2004. Endangered and threatened species of Illinois: status and distribution, vol. 2: animals. Illinois Endangered Species Protection Board.

Tucker, J.K. 2002. Growth and survivorship in the Illinois chorus frog (*Pseudacris streckeri illinoensis*) in Madison County, Illinois. Transactions of the Illinois Academy of Sciences. 93(1): 63-86.

Tucker, J.K., J.H. Chick, and R. Szafoni. 2008. The Illinois chorus frog (*Pseudacris illinoensis*) and wetland mitigation: What has worked?. Illinois Natural History Survey Technical Report.

Woods, A.J., J.M. Omernick, and B.C. Moran. Ecoregions of Illinois. USEPA Western Ecology Division. Retrieved from: [http://www.epa.gov/wed/pages/ecoregions/il\\_eco.htm](http://www.epa.gov/wed/pages/ecoregions/il_eco.htm) (March 2012).